

REMARKS

The Examiner is thanked for the due consideration given the application.

Claims 1-6, 9, 10 and 12-25 are pending in the application. Claims 7, 8 and 11 have been canceled and their subject matter has been incorporated into claim 1. The amendments to claim 1 find additional support at page 10, lines 14-17 of the specification. Independent claims 17, 19 and 21 have been amended to reflect the amendments to claim 1. Claims 23-25 are new and find support at page 10, lines 14-17 of the specification.

No new matter is believed to be added to the application by this amendment.

Art Rejections

The Official Action has applied the following art rejections against the present invention:

I. Claims 1-4, 6, 11, 14-17 and 19 have been rejected under 35 USC §103(a) as being unpatentable over NAKAGAWA et al. (WO 01/86748) in view of FUNAOKA et al. (WO 00/20493) (as referenced to their corresponding U.S. Patent Nos. 7,029,793 and 6,666,969).

II. Claim 5 has been rejected under 35 USC §103(a) as being unpatentable over NAKAGAWA et al. in view of FUNAOKA et al. as applied to claims 1-4, 6, 11, 14-17 and 19, and further in view of KIM et al. (*Solid State Ionics*, 144 (2001) 329-337).

III. Claims 7-9 and 12-13 have been rejected under 35 USC §103(a) as being unpatentable over NAKAGAWA et al. in view of FUNAOKA et al. as applied to claims 1-4, 6, 11, 14-17 and 19, and further in view of NARANG et al. (U.S. Patent 6,248,480).

IV. Claim 10 has been rejected under 35 USC §103(a) as being unpatentable over NAKAGAWA et al. in view of FUNAOKA et al. and NARANG et al. as applied to claims 1-4, 6-9, 12-17 and 19, and further in view of KANEKO et al. (U.S. Patent 5,494,991).

V. Claims 18 and 20 have been rejected under 35 USC §103(a) as being unpatentable over NAKAGAWA et al. in view of FUNAOKA et al. as applied to claims 1-4, 6, 11, 14-17 and 19, and further in view of ICHINO et al. (U.S. Patent 5,858,264).

VI. Claim 21 has been rejected under 35 USC §103(a) as being unpatentable over NAKAGAWA et al. in view of FUNAOKA et al. and further in view of KIM et al.

VII. Claim 22 has been rejected under 35 USC §103(a) as being unpatentable over NAKAGAWA et al. in view of FUNAOKA et al. in view of KIM et al as applied to claim 21, and further in view of ICHINO et al.

These rejections are respectfully traversed.

Claims 7, 8 and 11 have been canceled and their subject matter has been incorporated into independent claims 1, 17, 19 and 21. The various combinations of the applied art were free of the rejections of these canceled claims such that incorporating

their subject matter into independent claims 1, 17, 19 and 21 instantly overcomes the rejections I, II, V, VI and VII.

Remaining are rejections III and IV of claims 7-9 and 12-13 under 35 USC §103(a) as being unpatentable over NAKAGAWA et al. in view of FUNAOKA et al. as applied to claims 1-4, 6, 11, 14-17 and 19, and further in view of NARANG et al., and of claim 10 using the additional reference of KANEKO et al.

The present invention pertains to a porous polymer electrolyte membrane formed from a polymer and a molten salt. Claims 7 and 8 of the present invention (now incorporated into claim 1) set forth that the polymer is a heat resistant aromatic polymer having no glass transition temperature below 100 °C.

Regarding these limitations, NARANG et al. teach a polymer electrolyte separator (membrane) formed from an aromatic polyimide (column 3, lines 61-67) for use as a high temperature electrolyte (Abstract).

However, NARANG et al. neither teach nor suggest a polymer electrolyte separator (membrane) formed from an aromatic polyimide.

In NARANG et al., an aromatic polyimide is used as polymer (a backbone) that forms a polymer electrolyte having cation exchange groups, and it is not used as a polymeric material that forms an electrolyte separator (membrane).

The aromatic polyimide of NARANG et al. is thus equivalent to a cation exchange group-containing polymer, such as

is recited in claim 12 of the present invention, which corresponds to the polymer that is mixed with a molten salt in instant claim 1 of the present invention (to form a mixture to be impregnated into the membrane) and does not correspond to the heat-resistant aromatic polymer of instant claim 1, which forms the microporous polymer membrane.

Moreover, since the original claim 7 was not rejected over NAKAGAWA et al. in view of FUNAOKA et al., neither NAKAGAWA et al. nor FUNAOKA et al. teach or suggest "the microporous polymer membrane comprises a heat-resistant aromatic polymer having no glass transition temperature below 100°C," as set forth in instant claim 1.

KANEKO et al. fail to address the above-described deficiencies of NAKAGAWA et al., FUNAOKA et al. and NARANG et al.

One of ordinary skill and creativity would thus fail to produce instant claim 1 of the present invention from a knowledge of NAKAGAWA et al., FUNAOKA et al. and NARANG et al. A *prima facie* case of unpatentability has thus not been made. Claims depending upon claim 1 are patentable for at least the above reasons.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

Conclusion

The Examiner is thanked for considering the Information Disclosure Statements filed December 15, 2004 and March 15, 2005

and for placing initialed PTO-1449 Forms of record in the application.

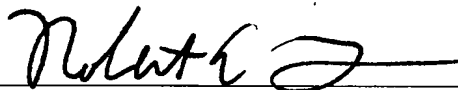
Prior art of record but not utilized is believed to be non-pertinent to the instant claims.

The rejections are believed to have been overcome, obviated or rendered moot and no issues remain. The Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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